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Parks for Growing Cities.

THE article by Mr. Baxter in another column referring to the proposed metropolitan system of parks for Boston has more than a local interest. Our rapidly growing cities will all be compelled, sooner or later, to face the problem of providing ground for public use, and the sooner the problem receives careful study the more perfectly and economically can the necessities of cities in this matter be met. There is no longer any need of argument to prove that ample and convenient open spaces for public resort and recreation are essential not only to the pleasure and comfort, but to the physical health and the mental and moral growth of the people. This is universally admitted. Twenty-five years ago the case was different. Men of high professional repute in this city, even as late as seven or eight years after the act to create Central Park had been passed, argued that additional pleasure-grounds would only offer more space for riot and disturbance; that no police force could preserve decency and order in such broad areas, where the lowest denizens of the city would congregate; that no gentleman would ever visit the park or allow his wife and daughters to go there.

No man in his right mind can now be found who harbors opinions of this sort. The park questions with which public-spirited men now concern themselves are, how to secure enough land, how best to adapt it to public use, and how to maintain and administer it most effectively for that end. These questions are growing more urgent because of the rapid increase of our urban population as compared with that of the whole country. In some states there are actually fewer people on the farms than there were ten years ago, and the cities now contain more than half of our entire population. This tendency is likely to be stronger for years to come, and the abandonment of the country makes it more necessary to supply the town with some of the country's advantages. In most cases the expansion of our cities outstrips prophecy, and outlying districts are swallowed up before any preparation is made for their future. Before any one realizes that a park may be needed the lands have become so valuable that the cost of any area spacious enough to give the city visitor a sense of enlarged freedom is appalling. The danger of delay in this matter is illustrated by the example of the cluster of large cities in New Jersey, just across the Hudson. Neither Newark, Jersey City, Elizabeth nor Paterson has any park worthy of the name. No doubt, it would pay even now to acquire land within reach of the centres of population in all of these cities, but had this been done twenty years ago a comparatively trifling expenditure would have been needed and the investment would have been paying liberal returns in the comfort, health and business prosperity of their population. If action is delayed twenty years longer there is little hope that any adequate provision for public pleasure-grounds will be made here until the cities are forced to demolish solid blocks of buildings to make room for grass and trees.

Nearly thirty years ago, in their report on the design of Prospect Park, in Brooklyn, Messrs. Olmsted, Vaux & Co. indicated on a map the beginning of a road from the southern entrance of the park, and made a suggestion that it should be a shaded pleasure-drive, and practically an extension of the park. Without laying down the course of this parkway, the designers stated that the ocean-beach would be its natural terminus, and it was added that a similar road might be carried through the rich country lying back of Brooklyn until it could be turned without striking through any densely occupied ground so as to reach the shore of the East River at Ravenswood. From this point, over high bridges thrown across the narrow straits into which the river is here divided, the parkway could be carried through a broad street directly into Central Park, beyond which was to stretch a system of sylvan roads leading to the northward. Such an arrangement would enable a man to drive in half a summer's day through the most interesting parts of Brooklyn and New York, their most characteristic suburbs and both of their great parks, with the long stretch of the Hudson, the Palisades in the middle distance, and the mountain-range in the background for a prospect at one end, and the foaming breakers of the Atlantic at the other, and "the whole might be taken in a circuit without crossing the same ground, and would form a grand municipal promenade hardly surpassed in the world for extent or continuity of interest." If this project had been promptly carried out that drive might have been taken now under trees of stately proportions. It is hardly possible now that any comprehensive scheme of this character, or like the one outlined for the greater Boston, can ever be adopted by the cities in New Jersey; but there has been a time when a system of parks and parkways might have easily been designed to link together the heights of Bergen, the Palisades and the Orange Mountains. This could have been done without occupying as large a park area, in proportion to the size and probable population of the combined cities in the year 1900, as London has to-day.

In many cities it would not be possible to secure a continuous line of parks and parkways, but there are many other advantages of a single plan on a comprehensive scale. All the varied wants that are supplied by open spaces can be met in this way alone. Every large city could have its ample tree-bordered avenue for festal meeting and procession, its zoölogical and botanic garden, its parade-ground, its children's playgrounds, with places for public meetings and ceremonies, music and fireworks, not to speak of sequestered gardens and broad, simple pastoral scenery, besides special features which the peculiar conditions of each city might offer. It is encouraging to know that the movement in Boston has begun before the opportunity for this magnificent provision for the future is lost. It is to be hoped that this example will be infectious, and that many other cities will arouse themselves to take decisive action in a similar direction.

In the report of the Honorable Thomas H. Carter, Commissioner of the General Land Office, for last year, attention is again invited to the rapidity with which the most valuable timber on the public lands is being exhausted, and it is once more shown that the land laws are inadequate to protect either the public forests from unlawful appropriation or the interests of settlers in their legitimate use of public timber. The laws passed last year will help to remedy some of the evils, but there is need of a general law to ensure equal rights and uniform privileges without any discrimination as to localities or industries. Mr. Carter suggests that one provision of such a law might be to empower the legislatures of the several states and territories to enact laws not in conflict with the act of Congress to govern and control the cutting and disposition of timber on the public domain. He thinks this would bring the local government to the aid of the general Government in such a way as to be helpful. He also holds that there should be provisions in the general law to facilitate the acquisition of title by actual settlers on agricultural land to a limited area of timber-land, so that each individual could guard his own timber. Provisions of this nature should certainly be made cautiously, for there is nothing in our experience to show that either the states or individuals will exercise any care in preserving the woods. It is true that the general Government itself has never done anything to inspire confidence that there is any promise of safety for the forests while under national control, but the proposition that some carefully considered general law relating to public timber should be enacted is one that every intelligent man in the country will admit without argument. Such a law will not be fully enforced until there is a thoroughly educated public sentiment behind it, but the passage of the act will be one of the most potent influences in developing this sentiment.

The Boston Metropolitan Park Movement.

THE park system of the city of Boston, though far from complete, has educated the public to the value of parks, and a definite movement for a metropolitan park system has at last been set on foot. Chief among the factors that have aroused popular interest in the subject are the agitation in behalf of a public forest-reservation at the Middlesex Falls, the agitation relating to the Blue Hills, instituted through the medium of Garden and Forest, the example of Lynn in creating its noble public forest, the incorporation of the Trustees of Public Reservations, together with the quickened consciousness of the need of extensive provision for breathing-spaces and the preservation of features of landscape interest throughout the region over which an urban population is rapidly spreading.

Throughout the state of Massachusetts there is now a marked interest in park-improvements. A large number of the cities and several of the towns have taken action under the general park law. The majority of the cities and towns within an eleven-mile radius of the Boston City Hall have accepted the provisions of the act by popular vote, as required, and have either appointed park commissioners, or are about to do so.

But even if all these neighboring cities and towns should be favorably disposed, they could hardly act co-ordinately for a single park system without special legislation.

The Trustees of Public Reservations, in their efforts to gain possession of the beautiful tract in Belmont containing the Waverley Oaks, found that it was impracticable to obtain title by purchase, owing to the complicated ownership. The preservation of these noble trees could be assured only by exercising the right of eminent domain, and the metropolitan park system offered the best method to meet the case.

Therefore, by co-operation with the Boston Board of Park Commissioners, the Trustees of Public Reservations invited to a meeting the park commissioners and other leading officials of the several cities and towns in the metropolitan region, together with other persons interested. At this meeting Mr. Charles Eliot, Secretary of the Trustees of Public Reservations, made a clear statement, showing how little use had been made of the remarkable natural advantages of diversified scenery offered by harbor and sea-shore around Boston. The growth of the metropolitan population to nearly a million people, and its rapid increase, made it essential to adopt practical measures for setting aside more ground for the public.

The conference was unanimous that action should be taken in a comprehensive way. A committee was appointed to petition the Legislature and to devise some plan for a permanent organization. Governor Russell is known to favor the object, and the Mayor of Boston endorsed it in his inaugural, and the appointment of a metropolitan park commission seems probable.

The most desirable points to secure will be the reservation of large tracts for public forests like the Blue Hills and the Middlesex Fells; the preservation of the sylvan and rural character of the river margins, and of the beautiful salt-marshes and the neighboring uplands of the tidal basins of the Charles, Mystic and Neponset rivers, so far as practicable; the taking of picturesque and historic spots and points of view like the Waverley Oaks, and the holding of the sea-shore for the public.

One gratifying fact made known at the conference was that Nahant Beach and the beach between Little Nahant and the main peninsula are the property of the town, and Mr. Frederick Law Olmsted has been requested to make a design for their improvement. These beaches form long and narrow necks of sand, connecting the two portions of Nahant with the mainland, like islands with a gigantic mooring. On one side beats the surf of the open ocean, on the other are the quiet waters of Lynn harbor. The highway runs along the crest of the beaches, and that is the reason why they are town property. The views from these beaches form one of the most beautiful, varied and extensive panoramas to be seen along the Atlantic coast. Lynn, with its background of rocky wooded hills, is particularly beautiful from these beaches. It was at his summer home at Nahant where Longfellow wrote "The Bells of Lynn."

The Park Commissioners of Lynn, besides the great Lynn Woods and the improvement of Meadow Park, which they are converting from a mud-hole into a playground in the heart of the city, also propose to give the Nahant beaches improvement a worthy terminus by laying out an ocean-side plaza at the point where the Nahant Drive meets the mainland.

A proposition was made to restore the forest-mantle, so far as practicable, to the islands in Boston harbor. The islands and mainland shores were originally well wooded. The trees were cut away, and the hope of any renewed growth was destroyed by pasturing the islands. Except on the southerly shore, the beauty of the harbor is marred by the bald, inhospitable look of the islands, with their hard, monotonous contours.

The Park Commissioners considered the question of reforesting these islands several years ago, and Mr. Olmsted made a valuable report on the matter. It was found that an expenditure of a few thousand dollars a year for a few years would restore the woods, so as to give agreeable diversity to the harbor landscape. A majority of the islands are owned by the city, and most of the owners of the others promised co-operation. The proposition was received with great favor, but it was killed at the City Hall. This result of municipal politics is to be lamented, for even one or two seasons' growth would have worked a transformation in the islands, and by this time their beauty would have been established.

The securing of the Middlesex Fells region as a public forest-domain will be made easier from the fact that various towns have enlarged their public holdings here in order to protect from pollution the historic Spot Pond, which furnishes their water-supply, and these, with other water-basins secured, amount altogether to something like 1,000 acres of picturesque land, much of it well wooded. The town of Stoneham has taken Bear Hill, the highest elevation in the Fells, and proposes to take Taylor Mountain, a continuation of the Bear Hill ridge. Finally, the Trustees of Public Reservations have received as their first trust the Virginia Woods, a fine tract of twenty acres, covered with an old growth of Hemlock and White Pine, lying between the Ravine and Wyoming roads that approach Spot Pond from Melrose, and a fund of $2,000 has been raised by subscription to care for it.

Finally, Mr. Walter Wright, a son of the late Hon. Elizur Wright, who was the father of the Middlesex Fells project, proposes to give for public uses, in accordance with his father's intention, as an experimental forest, a handsome tract, mostly of White Pine, on Pine Hill, in Medford.

Altogether there are between 1,300 and 1,500 acres, out of 4,000 in the entire region, now assured to public use in the Middlesex Fells. What is needed is to connect the various scattered public holdings, make them convenient of access, secure certain important features that still remain pri-

vate property, like the lovely cascades in the easterly margin, and bring all under a uniform system of administration. This can best be done under the proposed metropolitan park administration.

Boston. *Sylvester Baxter.*

Colonial Summer-houses.

AMONG other revivals of old-time usages prevalent during this decade it is surprising not to see some creations resembling the old summer-houses, so much used and admired from fifty to one hundred and fifty years ago on many estates in the older-settled portions of our country. As far as I am aware, the restoration of a few remaining old ones has been the only effort made in this way. These structures were what their name implies—houses for summer. Intended for use during warm weather, when artificial heat was not wanted, they were usually built and finished in a manner to correspond with the best rooms in the houses to which they were adjuncts; indeed, they must often have been superior in their ornamentation and furnishings. Chippendale furniture of the purest design and delicate construction found an appropriate setting in some of them, and in the coast towns, when their owners were also ship-owners, they were sometimes furnished with Teak-wood furniture and those wonderfully artistic pieces from India and China, beside which modern importations look so inferior. The Mediterranean countries were also contributors, and decorations in marble and Italian glass could be found. Often there were delicate chandeliers and tall candlesticks, surrounded by still taller glass shades, like those used in the West Indies, for a free circulation of summer air was desired, and the dripping of wax was thus prevented.

Musical parties were a favorite form of entertainment held in these summer-houses, and on other occasions the supper was served in them, when they were brilliantly lighted and decorated. What we call lawn and garden parties were not then in vogue, but ladies' luncheons were often given in the summer-house, and, no doubt, were as enjoyable as any now held. The ladies often used them as morning and reception rooms, and delightful they were for spinning, reading or needlework, or to receive friends apart from the work of the domestic establishment.

The young people and lovers were especially appreciative of their attractions, and many interesting tales could be told of famous people who arranged the important affairs of their lives within these sheltering walls. Before writing upon walls and window-panes had reached its present vulgarity, inscriptions and couplets were often composed in these abodes of summer life. Even the great Washington and his generals are said to have enriched some little panes of glass with their autographs. The practice was a direct continuation from an even earlier time, as it was on the window of a summer-house that Leicester wrote:

Fain would I climb, yet fear I to fall.

And Elizabeth wrote under it:

If thy heart fail thee, climb not at all.

In the hands of less exalted or witty personages, however, the practice soon degenerates into mere scribbling, and it has no good reason for revival or survival.

But there is something to be said, however, in favor of these attractive little structures. They largely occupied the sphere of the present piazza and summer parlor. With the appearance of the modern piazza they went out of fashion, and, to some extent, their office is filled by arbors and rustic shelters, but these belong more properly to somewhat distant and less frequented portions of the grounds. The true summer-house, although often arranged with windows to overlook the beauty of land and water, is an attraction in itself, adapted to highly cultivated and artificial surroundings, even to gardens of small extent.

It is for use as a detached portion of the house rather than an independent structure. It should be retired, but not far distant, and should correspond in architectural features with the main structure. There are some dwellings upon which it is difficult or undesirable to have the usual piazza, especially in mountain districts, where frequent rains make it desirable to have the sunshine directly upon the house, and in foggy situations near the ocean, where dampness makes the piazza objectionable. It is often hard to build an addition to a building already completed, and the problem might be solved and additional room furnished by a disconnected building that would answer every purpose and add to the attraction of many establishments. Afternoon teas and strawberry parties can be delightfully managed from them, and they lend themselves gracefully for all kinds of floral decorations.

The illustrations on page 65 are from examples still remaining in Rhode Island, and show our ancestors' taste, although these are less ornate and smaller than some formerly in existence. They are all of one story, although we have heard of those which had two. They are built of wood, and the workmanship is of a high order. The roof-line in two of them has received careful consideration, and adds much to their picturesqueness. In the third, however, the upper part is inferior in design. This is the one with the flight of steps, and it is built upon a huge boulder in the garden of Wm. B. De Wolf, in Bristol, where it has weathered the memorable gales of 1815 and 1869. A carved figure of an Indian with a tomahawk surmounts the centre of the roof. A figure of a cavalier occupies the same position on the second, which also stands in Bristol, and for many years overlooked the harbor from its position in a terraced garden, which is said to have had great beauty, and situated directly upon the shore of Narragansett Bay. A high carved fence, surmounted with wooden urns, separated the garden from the highway, and other carvings ornamented the grounds, which were of the era when not only Sir Timothy Dexter, but all of New England, admired decorations of this sort. The larger house on the left is in the garden of Mrs. E. S. Diman, now in Providence, but once famous as Rose Farm, with its beautiful grounds. The building is large and commodious, showing the same care in construction and delicate finish as the others, in cornice and other details. The foundation is of cut freestone, and underneath is a well-paved store-room that has been in use for several generations. Our modern architects could doubtless design structures with all the attractions of the old ones, and adapted to the requirements of modern life, if a desire for them was manifested.

New York. *John De Wolf.*

Notes of a Summer Journey in Europe.—VI.

THE botanic garden at Leipzig has, within a few years, been removed from its old location to entirely new grounds, so that none of its trees are large. Owing to the limited area they are also much crowded, and can never become finely developed. The collection here is said to contain about six hundred species and varieties of trees and shrubs. As at Munich, it is found impossible to grow good specimens of conifers.

The park called the "Rosenthal" is a pleasant, restful recreation-ground of meadow and woodland, generally free from artificial embellishments, and with no more drive-ways than seem absolutely necessary. Many of the trees in the park have attained to a large size. The European Hornbeam (Carpinus Betulus) is here planted with the Common Elm (Ulmus campestris), forming fine broad spreading trees, almost equaling the Elms in height, and with trunks two feet in diameter. Among American trees noted were some good Hickories and fine typical specimens of the Pin Oak (Quercus palustrus), with trunks a foot in diameter. The stems of exposed trees on the streets are protected by coarse basket-work, five or six feet high, which answers very well as a guard and is cheaper and less liable to injure the trees than many more elaborate contrivances.

From Leipzig to the old town of Merseburg, by way of Halle, need not take more than an hour by the railroad, and a brisk walk of an hour and a half from Merseburg brought me to the little village of Zœschen, where Dr. G. Dieck has established his collections and nurseries. There are some fine avenues of old Horse-chestnuts in Merseburg, and the road to Zœschen, like most of the roads in this part of the country, is lined on both sides with fruit-trees, principally Cherries, which bear fruit of good quality, but great quantities of Pears, Apples and Plums are also planted. All were bearing heavy crops of fruit, and most of the cherries had already been picked. Sections are sometimes planted in Lindens or other suitable trees. The fruit-trees are planted about twenty-five feet apart, the distance across the road being thirty feet. The country here is flat, with soil too rich and valuable for regular farm-crops to allow much of it being devoted to woodland.

Dr. Dieck has given his establishment the name of "National Arboretum," a title which might easily give a wrong impression of the status and character of the place. It has no connection whatever with the government, being solely the property and enterprise of Dr. Dieck. Besides being a nurseryman and an arboriculturist, Dr. Dieck may be classed as an extreme enthusiast on the subject of trees and shrubs and as a collector of everything that promises to be an addition to his stores. New plants, valuable only for their botanical interest, are collected as eagerly as the showy species, and Dr. Dieck has the reputation of being very generous with his plants to botanical

and other scientific institutions. Collectors are employed in various parts of the continent of Asia, of Japan, of some of the not thoroughly known cooler regions of Europe and North America, wherever it is likely that hardy novelties may be obtained. As the climate of this central German plain is severe in winter, it is the aim of the proprietor of the "National Arboretum" to procure his stocks from the highest latitudes and altitudes or most exposed situations in which they occur in their native habitats. I have spoken of Dr. Dieck's enterprise in collecting, because he is apparently trying to do a work in Germany similar to what the Messrs. Veitch have long been doing, in introducing new plants to English gardens.

The grounds in the immediate vicinity of the house are filled with various trees and shrubs, with small nursery material, and particularly with the newer and rarer acquisitions. An idea of the pains taken in bringing the collections together may be gained by the statement that it is claimed there are about 500 species and natural variations of wild Roses here, and an equal number of forms of Willows. But, besides being torments to systematic botanists, the great majority of these variations or hybrids are of no particular value either for use or ornament. The custom of giving Latinized names to garden-hybrids, or the merest variations, is also to be deplored, as tending to create greater confusion in the nomenclature and synonymy of already well-defined species. An interesting hybrid was one between Rosa Beggeriana and R. rugosa, which produces rose-colored flowers from the tips of its shoots throughout the season, as is the habit of R. Beggeriana. Great pains have also been taken to introduce the kinds of Roses from which attar of roses is produced, and some account of these forms is given in the catalogues.

A shrubby Polygonum from Afghanistan may prove to be an interesting addition to our gardens should it be found sufficiently hardy. Rhododendron Ungerni, from the mountains of Armenia, is considered another great acquisition, as it gives promise of being quite hardy. The leaves are very white on the under surfaces. One or two other novelties in Rhododendrons are also promised. Hedysarum multijugum, from Mongolia, is here quite hardy, forming a straggling shrub five feet high. A white-flowered Cytisus from the Balkans is much prized.

The raising of Coniferæ and Ericaceæ from seed is not any easier here than we find it in America, as the young seedlings are just as liable to sudden and wholesale destruction by fungi unless great care and watchfulness is exercised. During the first years, or until they have attained to a good size and strength, the young evergreens and plants of the Heath family are sheltered from the direct rays of the sun by very loose mats made of coarse reeds or grasses placed on frames which are sufficiently elevated to admit of free passing beneath.

The main nurseries are divided into several large and quite separate blocks of many acres in extent, perhaps comprising about 125 acres in all. Ornamental, shade and fruit trees are grown. A large portion of the fruit and shade trees produced here are grown with straight clean stems, without branches for six or seven feet or more, to meet the great demand for trees for road-side planting. Among the conifers there were a number of species, generally considered thoroughly hardy in regions much colder, which showed some injury from the frosts of the last winter. Many young Spruces were greatly injured by a species of Spruce-bud louse, probably Chermes (Adelges) abietis, which causes cone-like swellings on the tips of the shoots and branchlets. It is the same or a closely allied insect which often attacks and seriously injures Norway, White and other Spruces in our own country. There seems to be no remedy except cutting off the infested tips as soon as they appear and burning them at once, instead of throwing them on the ground, where the insects would probably be able to complete their development. It is noticeable that trees in vigorous health are apparently less affected than those which make poor growths or are in uncongenial situations.

This insect came under my notice in a curious way when on the Rigi, in Switzerland. A great deal of buzzing overhead among the branches of some Spruces proved, on examination, to be caused by swarms of bees, wasps and flies which had been attracted by the liquid excretions or honey-dew made by great numbers of chermes with which the trees were infested.

Between Halle and Berlin the train passes many more large tracts of forest, and here we find the Scotch Pine (Pinus sylvestris) chiefly planted. As a rule, only the poorest land is planted in wood, and its poverty is often attested by the White Birches, which spring up among the Pines where there are favorable conditions. The Pines looked in good thrifty condition, and over large tracts the trunk of every one was encircled by a band intended to prevent inroads by certain injurious insects.

As would naturally be expected at the capital of the empire, the Botanic Garden at Berlin is one of the best of these German public institutions. Besides the collections of living plants, it has connected with it a very excellent botanical museum, which is open to the public on certain days in the week, and which cannot fail to be almost as instructive as the garden. The collection is especially rich in representing trees and the more useful plants and their products.

Of the plants in the garden it seems hardly necessary to speak in detail, as there is a good deal of similarity, both in arrangement and specimens, in many of these institutions. In naming the specimens the Latin name and authority, the German name and the native country are given on the labels.

The present director has given the Alpine Garden a prominent place here, some fine trees having been sacrificed to it. The trees in the garden are generally rather crowded, but there are some large well-developed specimens among them. A specimen of a form of the Oriental Plane-tree has a trunk approaching five feet in diameter at two or three feet from the ground, and shows no signs of disease.

The Oregon Ash (Fraxinus Oregana) was noticed, about twenty-five feet high, growing vigorously and fruiting freely.

The mystery which surrounds the origin of the Myrobalan Plum (Prunus Myrobalana) was here recalled by a large broad spreading tree, thirty feet high, labeled under the synonym Prunus cerasifera, and with North America credited as its natural habitat. Most horticultural works, as well as other gardens, almost uniformly attribute this species to North America, and it is strange that it has not yet been found wild by American botanists if it is a native of this country.

The evidence seems to point to south-western Asia as its natural home. Seeds, without name, which were sent to the Arboretum by Max Leichtlin, and said to have been collected in Turkistan, produced plants of this species which bore yellow fruit. It is true that this seed may have been wrongly labeled by mistake, or the plants from which the seed was collected may have been introduced and not been indigenous to Turkistan. Another point in favor of the idea that it is a native of Asia is that we have in what is called Prunus Pissardi in many nurseries a plant which is evidently a form of the Myrobalan Plum, and already it is to be found in gardens and catalogues under the name of Prunus cerasifera, foliis purpureis, or P. cerasifera, Pissardi.

Whence this came to Europe is known, for it is recorded that it was first sent to France by Monsieur Pissard from the capital of Persia, the sender being at that time gardener to the Shah.

Seeds of this purple-leaved Plum have been sown and the young plants derived have agreed exactly, in every essential particular, with plants of the true Myrobalan Plum of the same age, the leaves of the seedlings being of the natural green color.

It is to be hoped that Dr. Dieck, Max Leichtlin or some other of the enterprising botanical explorers of south-eastern and central Asia, may soon be enabled to enlighten us as to the true home of the wild Myrobalan Plum.

Arnold Arboretum. *J. G. Jack.*

Notes on Cone-bearers of North-west America.—I.

Misnamed California Pines.—Two species of Pines belonging to the close-cone group are bearing in our present Pine literature untenable names. I allude to the Monterey Pine and the Narrow-cone Pine, called Pinus insignis and P. tuberculata respectively. The first was named more than one hundred years ago by one of the earliest botanists to deal with California plants.

Pinus Californica, Loiseleur, in *Nouveau Dubamel*, vol. v., 243 (1816), in part, excluding characters of the seeds.

P. tuberculata, D. Don, in *Trans. Linn. Soc.*, xvii., 441 (1837), and

P. radiata, D. Don, l. c. 442.

P. insignis, Douglas, in Loudon's *Arboretum* (1844), and most subsequent authors.

The name conferred by Loiseleur de Longchamp in 1787 (published l. c. in 1816) was accepted by such eminent botanists as Loudon, Endlicher, Hooker & Arnott, Nuttall, Carrière, etc., but was not taken up by most other authors, perhaps on account of an error in the description of the seeds, due to mixing of specimens.

However, under the laws of botanical nomenclature, adopted by the International Congress at Paris, 1867, the Article 49 (with remark under it) requires that Loiseleur's name be restored, inasmuch as he sufficiently distinguished the species, and, fortunately, Californica is a very appropriate name for the first-described California Pine.

The treatment of the other species—the Narrow-cone Pine—must be more radical, involving the coining of a new name, Pinus attenuata. P. tuberculata, Gordon, in *Jour. Hort. Soc., London*, iv., 218 and f. (1844), and subsequent publications.

Mr. Gordon described correctly, and was the first author to do so, the Narrow-cone Pine, which he supposed was the same as the one described from meagre data, and named P. tuberculata by Don (l. c.); but that Pine was a small-coned form of the Monterey Pine, as the figure in Lambert's *Pinus*, 1st ed., iii., 131, t. 85, plainly shows, and it is so cited by recent authors, hence the name tuberculata was misapplied unintentionally to this abundantly distinct species, which may now bear the name attenuata,

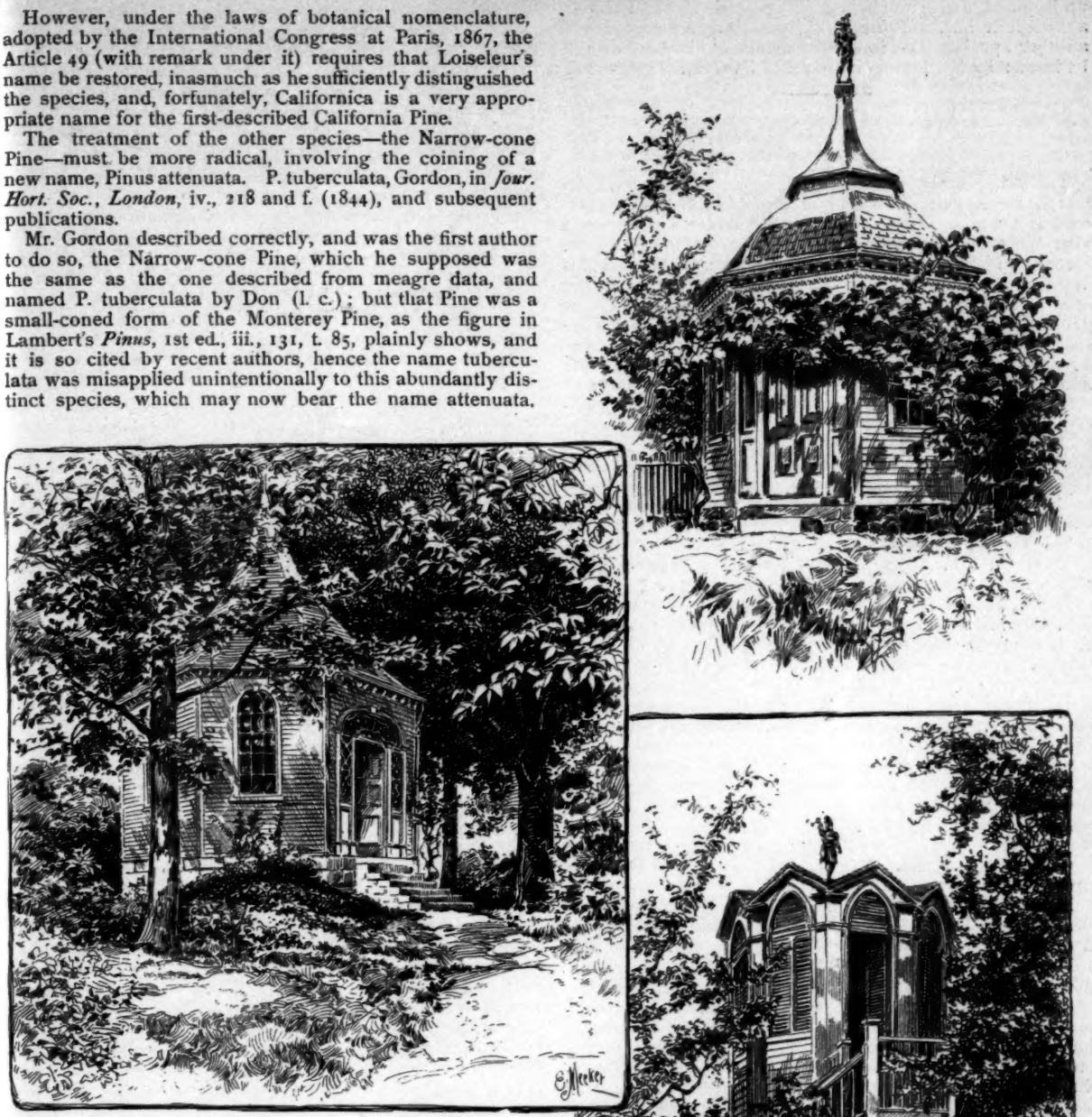

Fig. 12.—Colonial Summer-houses.—See page 63.

suggested by the tapering cones as well as the slender habit of the trees when found in groves.

Oakland, Cal. *J. G. Lemmon.*

[It is possible that the plant described by Loiseleur as Pinus Californiana (not Californica) may be identical with the species now commonly known as Pinus insignis. The fact that the specimen upon which Loiseleur's species was founded was gathered at Monterey points to this conclusion. But the seeds of Pinus insignis are not edible, as he represented them, and his description is so unsatisfactory and faulty that it is impossible to recognize absolutely from it the species he intended. Under these circumstances the only safe way is to pass over Loiseleur's name entirely. This was the conclusion reached by Dr. Engelmann (see Brewer & Watson, *Botany of California*, ii., 127), who also discarded as too uncertain the Pinus adunca of Bosc (*Cat. Hort. Paris*, 247), first published in 1816 by Poiret (*Lam. Dict. Supple.*, iv., 418). The oldest name of whose identity there can be no question is therefore Pinus tuberculata of Don, and this, it would seem, must be taken

up in place of the much later Pinus insignis of Douglas, although it has, unfortunately, been long associated with another species, the Pinus tuberculata of Gordon, now to be known by Mr. Lemmon's name of Pinus attenuata.—Ed.]

Foreign Correspondence.

London Letter.

Thrinax Morrisii.—This is a new species of Palm which the Assistant Director at Kew, Mr. Morris, discovered in Anguilla, one of the Leeward Islands, when on a visit there last year. He brought back with him stems, leaves and fruits, from which Herr Wendland has made his description. Subsequently, good seeds were obtained for sowing at Kew. It differs from all other species of the genus, in being of very small stature, rivaling in this respect Phœnix Rœbeleni, the pigmy Date, which was figured in Garden and Forest a year or so ago. In the *Kew Bulletin*, for May last year, Mr. Morris stated that:

"Before arriving at Blowing Point (in Anguilla) an interesting little Palm was found growing on broken limestone rocks. It was present in fairly large quantities, and the fan-shaped leaves were used for thatching native huts. The chief interest attached to this Palm is connected with its dwarf habit. The largest and most mature specimen did not measure more than about thirty or thirty-five inches in height, and the stem was about two and a half inches in diameter. . . . There is little doubt it will prove most attractive and interesting in a horticultural sense."

The species of Thrinax which finds most favor in England is T. elegans, sometimes called T. Barbadensis, sometimes T. Loddigesii, but which ought properly to be called T. radiata. It forms a pretty pot-plant when small, and when large is one of the handsomest of the smaller fan-Palms, the elegant leaves clothing the stem almost from top to bottom, even in tall specimens. T. excelsa, T. parviflora and T. argentea are also exceedingly handsome. There are splendid specimens of these in the Palm-house at Kew. With reference to the exceptionally dwarf character of T. Morrisii, it is just possible that under conditions less exposed and more favorable than those under which Mr. Morris found this species, it may grow much larger than any seen in Anguilla. I know this happens with some kinds of Phœnix.

Child's New Japanese Wineberry.—Under this name a plant is advertised, this week, by an American nurseryman in some of the London horticultural journals. It is described as a bush five to seven feet in height, and as being able to "stand alike the cold of northern winters and the heat of tropical summers without the slightest degree of injury." Judging from this description and the picture of the plant which accompanies it in the advertisement, I have no doubt that the plant meant is the Japanese Rubus phœnicolasius, which was introduced from Japan into Europe by Dr. Maximowicz. A plant of it was obtained from the Jardin des Plantes, Paris, for Kew in 1875, from which a picture was made and published in the *Botanical Magazine* in 1880 (t. 6479). For the first year the plant at Kew grew outside among the collection of hardy Rubi, where it was nearly killed by the cold of the succeeding winter. It was then removed to a sunny position in the large temperate house, where it grew luxuriantly. Here it assumed the habit of a very tall Raspberry, the shoots growing to a height of ten feet or more. They were fastened to a pole. In summer the plant flowered freely, and the flowers were succeeded by a fine crop of shining scarlet fruit, scarcely as large as an ordinary raspberry. The fruits remained on the plant until midwinter. They were fit to eat, but mawkish and inferior in flavor to blackberries. The flowers are small, the petals pinkish, with long calyx lobes, which fold over the young fruit, expanding again as the berries ripen. The stems, petioles, midrib of the leaf on the under side, together with the flower-stalks and calyx-lobes, are clothed with long, stiff, gland-tipped red-purple hairs; there are a few spines at the base of the ripened stems. These hairs are, perhaps, the most ornamental feature of this species of Rubus, although the fruit, when ripe, is attractive. With regard to the statement that it will "stand the cold of a northern winter without injury," I should say that it depends on what is meant by "northern" and "winter." Certainly the plant is not hardy at Kew, where it is still grown in the temperate house.

[There is no doubt about the ability of this Rubus to endure the winter climate of New York and its vicinity. Plants stand out here with no protection, and are perfectly hardy. It is quite possible that the seeds sent to Europe by Dr. Maximowicz came from a more southern region than those from which the strain offered by Mr. Childs were grown. Professor Georgeson collected these seeds in the mountains of northern Japan. It is probable, too, that there is as great a difference in the quality of the fruit of different plants as there is in their hardiness. The berries we have tasted are by no means "mawkish."—Ed.]

Cattleya labiata vera.—A somewhat novel method of subscribing to a charitable institution was adopted lately by Messrs. F. Sander & Co., who placed in the hands of an auctioneer a large newly imported specimen plant of this Cattleya to be sold for the benefit of the Gardeners' Orphan Fund. The plant was a magnificent one, having over 250 healthy pseudo-bulbs, forming a mass more than a yard through. It realized fifty guineas, a price which, under the circumstances, may be called a fancy one, really good plants of this Cattleya being now obtainable in England or Belgium for about five shillings each. Such a specimen as the above would be probably fifty years old at least. Messrs. Sander & Co. have promised to give a full and complete account of the discovery of this Cattleya in the forthcoming number of *Reichenbachia*.

The Gardeners' Benevolent Institution was established about fifty years ago for the purpose of assisting aged and infirm gardeners who were unprovided for in any other way. The subscription for gardeners is a guinea a year, but by far the largest proportion of the funds are contributed by wealthy sympathizers. Upward of $275,000 have been distributed in pensions and gratuities since the institution was started, the sum disbursed last year amounting to $13,700. While preference is given in the election of pensioners to those who have subscribed, a considerable number of those who enjoy the benefits of the institution have been elected on the recommendation of liberal subscribers. The sum granted per week to each pensioner is four dollars for a man, three dollars for a woman. Last year a pensioner died at the age of 103. He had been in receipt of assistance from this institution for over thirty years. Members who have subscribed one guinea annually for fifteen years are, on attaining a certain age, entitled to a pension without taking their chance in an election. The good work done by an institution of this kind is too apparent to need comment. With this to look after the comfort of the aged gardepers, and an equally zealous and beneficial body of a similar nature—the Gardeners' Orphan Fund Committee—to provide for and educate the orphan children of gardeners, the cause of the needy among those who practice horticulture in England does not go uncared for.

W. H. Fitch.—Any one familiar with the English botanical literature of the last half-century will be acquainted with the name or initials of this botanical artist, who for about forty years was the acknowledged first botanical draughtsman in the world. His death, which occurred at Kew on the 14th instant after an illness of over two years, has served to call attention to the enormous amount of valuable work he did. He was a Scotchman, having been born in Glasgow in 1817, where he was employed as a boy in a printing-house. His early promise as a draughtsman was the means of bringing him to the notice of Sir William Hooker, at that time Professor of Botany at Glasgow University, and young Fitch was engaged by him to assist

him privately. When Sir W. Hooker was appointed Director of Kew, in 1841, he brought Fitch with him. Here he soon found scope for his skill in the preparation of botanical illustrations of all kinds. He made the plate for Hooker's *Icones Plantarum* from the commencement (1837), and soon afterward took over the entire work of plate-drawing for the *Botanical Magazine*, for which he was sole artist for a period extending over forty years. He made the illustrations for all the principal publications prepared at Kew up to within a few years of his death. The splendid folios by Sir Joseph Hooker on Himalayan Plants and Himalayan Rhododendrons; the six quarto volumes which were the result of Sir James Ross's Antarctic expedition; the *Botany of the Herald*; the *Flora Vitiensis*; Bateman's *Odontoglossums*; Elwes' *Monograph of Lilies*; Saunder's *Refugium*; Howard's *Cinchonas*—these contain some of his best work. He also prepared the illustrations for the botany of the Speke and Grant expedition, published in the *Transactions of the Linnean Society*, and for Welwitsch's plants, published in the same periodical. All the numerous pictures of Ferns published by Sir W. Hooker were by Fitch's hand. His fidelity to nature, the judgment he exhibited in bringing into prominence those details which in botany are of primary importance, although art of the popular kind would hide or ignore them; the picturesque arrangement of his subject, the accuracy of outline, perspective and color—these were some of the points in which Fitch excelled. His eight magnificent illustrations of the Victoria regia, prepared for the Elephant folio devoted to this plant by Sir William Hooker and published in 1851, are among the best examples of his picturesque work. He obtained a Government pension of £100 a few years ago.

London. *W. Watson.*

Cultural Department.

New Chrysanthemums.

ONE of the most striking things connected with the present passion for Chrysanthemums is the almost universal passion for change. The fancier may be faithful to the species, but he is certainly very fickle in his attention to individual kinds; and constant and unceasing change in the varieties grown, and not always for the better, seems to be the rule. Amateur cultivators of other flowers, while testing new varieties, will grow the old ones year after year for a lifetime, but looking back for the last decade, there will be found very few Japanese Chrysanthemums in the lists of that time which are now much esteemed or grown, while in this country the most popular varieties are mostly of home production or imported more recently from Japan. The French varieties which preponderated no longer than five years ago are gradually disappearing from the lists, and new ones excite little attention here, except in special cases. American kinds are also making their way in the world at large, though it took the foreigner a remarkably long time to discover their merits. It is scarcely five years since one of the leading English growers and dealers wrote me that he had seen only one good Chrysanthemum from America. To-day they are appearing on the prize-stands, and gain certificates in what seems the most erratic way.

From the lists of new varieties now appearing, it is pleasant to know that the most ardent desire for change can be gratified. I have not counted the number of new varieties offered from various sources, but from a careful estimate I think that a fairly full collection of the new kinds could be secured for something over $400—not an excessive amount for a fad, but a striking contrast to the condition of things a few years ago. Most interested growers have already made notes of the promising kinds desired, and it is perhaps not expedient to express an opinion as to the merits of the productions of one's neighbors; it may be said, however, that among the new sorts are a fair number of first-rate kinds with a smaller number with striking distinctness. A few changes of color among some older forms seem the greatest gains—as, for instance, yellow hairy kinds, offered by two growers. A form of this character seems to have been first offered in the United States by an Oakland (California) nursery last year under a Japanese name, and W. A. Manda, from the United States Nurseries, is highly commended.

Abroad, Delaux again offers new varieties of his strain of dwarf early-blooming, large-flowering kinds, at prices ranging from one dollar each to two marvels at six dollars each. This last seems an excessive price for a weak Chrysanthemum-slip, but no plant would seem dear with this description: "Nain, 55 centimètres, fleurs soutenues par de véritables liges de fer, cieme frais imitant la cire, flammées et bordées de rose mousseline; coloris frais et entièrement nouveau dans les Chrysanthèmes. Cette nouvelle venue qui est absolument remontante, surpasse en beauté les plus remarquables variétés d'Automne (!) elle fera sensation dans le monde horticole, où elle est appelée au plus grand avenir, pour la confection des corbeilles, culture en pots pour marchés et pots spécimens pour Exposition." Catalogue-writing seems to be one of the things they do better in France. There is an air of sincerity mixed with enthusiasm, and a struggle to express a mental picture in the above which would convert a brazen image into a buyer, or even impress those who have learned to translate into the vernacular by the light of experience.

Delaux's new strain, however, is said to have proved valuable under him in England, and is worth the attention of any one interested in such flowers. The varieties are said to commence to bloom in April, August, September and October, and to be remontant or successional bloomers, and very dwarf, with large flowers. A few of these were exhibited by Mr. J. H. Spaulding last fall in his general collection, being the first shown in the United States. New breaks and types of flowers are always interesting, and in no family more so than in the Chrysanthemum, especially when one has grown a thousand or more varieties, a large number of which are merely slight variations on others.

Elizabeth, N. J. *J. N. Gerard.*

Potting Ferns.

THE month of February is generally a good time for this operation, as a majority of Ferns begin their new growth soon after and the roots become active. To secure strong new fronds the Ferns should be potted before the new growth has made much progress, and this is especially necessary when the ball of earth has to be reduced to avoid the use of large pots. With many of the Adiantums this reducing process may be successfully used before the young fronds are far advanced, and at the same time the worst of the old fronds may be removed, although cutting off all the old fronds at this time may weaken the following growth.

Propagation by division of the crowns is best done at this season; but whenever it is possible to secure them, seedlings make better and more rapidly growing plants. Specimens too large to shift without inconvenience are much benefited by a top-dressing of new compost, and the vigor of Tree-ferns will be increased by wrapping sphagnum around the trunk, the moisture thus applied inducing a fresh outgrowth of roots into the moss, and from thence into the soil below. With the Gleichenias the dividing process should have been begun before this, the safest practice being to separate the rhizomes some months before the piece is taken away from the parent-plant, thus giving the young Fern a chance to make some fresh roots before the final removal. The potting material for these beautiful Ferns may be somewhat stiffer than is suitable for many others, and especially for the strong-growing species, such as G. flabellata and G. dichotoma, while G. Mendeli, G. rupestris and G. dicarpa in its various forms prefer a little more peat. But in all cases abundant drainage should be provided, since the plants have shallow roots, and are impatient of stagnant water.

The Filmy Ferns, of which the various Hymenophyllums and Trichomanes are the best known, will probably need repotting or top-dressing, and the mixture for this purpose should be rather coarse and open in texture, and should include some pieces of charcoal and broken sandstone, or if that is not at hand some broken brick will answer. Ferns of this class, including the lovely Todea superba, should be potted rather high—that is, raised a trifle above the rims of the pots—and should not be disturbed about the roots oftener than is absolutely necessary.

In so large a genus as the Adiantums much difference is found in the requirements of the various species, both in soil and in temperature. For instance, the finest of all the Maidenhairs, A. Farleyense, is best potted in a strong soil composed of good fibrous loam, with a small quantity of sand and a liberal proportion of well-rotted cow-manure. Then, with careful shading and watering, it will soon make a fine specimen. The use of peat for this species seems to be a drawback, while for A. curvatum I have found nothing better than coarse peat alone. A. rhodophyllum and A. Victoria, both of which are

very pretty dwarf-growing species, grow well under the treatment recommended for A. Farleyense, and, like the latter, are easily multiplied by separating the crowns and keeping the divided plants in a moderately close house and well shaded to induce fresh growth.

All pots used for Ferns should be clean, new pots being preferable, but in case these are not at hand the old ones should be thoroughly scrubbed before they are used for repotting, not only for the sake of neatness, but for the well-being of the plants.

Holmesburg, Pa. *W. H. Taplin.*

Growing Early Strawberries.

THE following plan which I have followed for years will at a moderate outlay bring strawberries a week earlier, and add to their size and quantity. I use a thin muslin, known here as tobacco cloth or plant-bed cloth. This can be bought at about two cents a yard, and it must be thick enough to shade the plants. This cloth should be stretched over the plants early in the spring before the least growth begins. In North Carolina, March 1st is about the right time. No one can expect the Strawberry-plant to do its best unless protected in winter. Here we use pine-needles, covering the ground half an inch deep. As soon as these are removed, and the manure or fertilizer applied and enough straw replaced around the plants to keep the berries clean, the cloth should go on.

After many experiments in search of a cheap and effective way of holding the cloth in place, I use small sticks of riven pine, known here as tobacco sticks, which are about three quarters of an inch square. These sticks are sawed up into stakes fifteen inches long, and sharpened at one end. The other end for about half-way is smoothed with a drawing-knife and a wood rasp if necessary, so as to remove all splinters and irregularities which could tear the cloth. A very small hole is then bored about one inch from the smooth end. Into this hole a section of small, soft wire, say number 17, about six inches long is run and bent around and wrapped on itself so as to hold securely. The other end of the wire is bent either before or after putting in the stake into a hook to hold the cloth. The hook should extend about three inches clear of the stake.

These stakes should now be driven into the ground for about half their length, placing them three feet apart in rows thirty-four inches apart, as some allowance must be made for the shrinking of the cloth, which is a yard wide. Turn the hooks the way the rows run, and let them all point in the same direction.

They are now ready for the cloth. If the hooks set to the east—and I set mine that way as our hardest winds come from the west—begin at the western end of the row. Run the hooks through the selvage of the cloth on each side and lock the outside row of hooks as you go, by twisting the wire around on itself. Leave the inside row of hooks open till you bring up the other width of cloth. Then when the selvage of that is caught on them lock those hooks, leaving what is then the inside row unlocked to hold the cloth on the next trip up. Always go back to the same end to start. When the bed is covered lock the outside row of hooks also.

Your bed is now covered solid with the cloth except for the small gaps along the rows of stakes, and if they are placed in straight rows and driven perpendicular, the gaps will be too small to do any harm. As the cloth is stretched only four inches from the ground and is quite elastic, snow presses it down without tearing it. When the danger from snow is past and the plants about ready to bloom, the covering can by a few minutes' work be raised to quite eight inches from the ground, in this wise: Begin at the end opposite to that on which you began to attach the cloth and bend the soft wire hooks straight upward over the stakes and leave them there. The cloth is so elastic that it can be walked on without injury except very near to a stake.

When the berries ripen remove the cloth, fold and tie it up neatly. Well handled it will last three years. The stakes, pulled up and kept where the hooks will not rust too badly, will last five years.

The benefit of this mode of covering is threefold. It protects from any ordinary late frost, even though the plants may be in full bloom. It hastens the growth and ripening of the berries, bringing them to the table a full week, and in some seasons ten days, earlier. The vines are thriftier thus sheltered, perhaps, because it is the nature of the Strawberry in the wild state to have the protection of weeds and grass, and they bear finer fruit and more of them.

It seems, too, that the distribution of pollen, especially when pistillate are grown with staminate varieties to pollenize them is far better under the cloth. As thin as it is, it offers enough resistance to the air to keep the pollen-laden currents of air in great measure near the ground and among the plants.

The original cost of this protection is from three to four cents a square yard. After that it is the mere trouble of putting on and taking off, till the material has to be replaced by new. No thorough-going gardener, after once using it, will ever relapse into the old haphazard manner.

Kittrell, N. C. *O. W. Blacknall.*

Early Peas.

THERE is fortunately no longer any need to waste the space in our home-gardens with the little extra Early Peas so much used by the market-gardeners.

We now have Early Peas of fine quality and productiveness, and dwarf enough in habit to suit the smallest garden. Among these the American Wonder is still unsurpassed in the matter of earliness. Its chief fault is its extremely dwarf character, but this will allow of closer planting and make it desirable for limited grounds. One of the most promising of the new peas is the Chelsea, which we tried last year for the first time. This variety was conspicuous among forty or fifty other sorts for its compact, dwarf habit—about fifteen inches high—and the wonderful profusion of its bearing. The snowy promise of its blossoms, which made the row conspicuous among its fellows, was fully met by the abundant pods. This is the most formidable rival of our old favorite Premium Gem that we have ever yet tried, and it is early with us as Alpha. While here, in North Carolina, these early peas now (January 25th) are being planted a little later than usual, owing to the wet weather. There is still time to consider the question of varieties and modes of culture in more northern gardens.

Peas grow rapidly and complete their growth in a very short time, so give them plenty of readily available food. Even on the richest garden-soil it will pay to give them a send-off with a good dressing of dissolved South Carolina phosphate and sulphate of potash. The mixture should contain eight to ten per cent. of phosphoric acid and six per cent. of potash. A little cotton-seed meal will be of benefit for an early start. The early sowing of Peas should be in a shallow furrow and the soil drawn up in a sharp ridge over the rows, so as to cover them about six inches deep. The ridge lessens the danger of their rotting in too wet soil when sown early, and will warm up earlier than the flat surface. No matter what your latitude, sow the earliest Peas just as soon as you can possibly get the ground in order. They will germinate when only a few degrees above the freezing point, and if not pushed into too rapid a growth by unseasonably warm weather, will stand a hard freeze when once above the ground.

My practice is to sow some of the extra early and early sorts at the first sowing, and then as soon as these begin to appear above the ground sow more of the early sorts, with a selection of late varieties for succession. For earliest planting in the family garden we advise American Wonder, Alpha, Chelsea and Premium Gem. For the second and later sowings a few Premium Gems, and a good lot of Stratagem, Yorkshire Hero, Horsford's Market Garden and the old reliable Blue Imperial.

Most of these are rather dwarf in habit, but all, except American Wonder, will be better for some support, and in a private garden neatness alone requires that they should be kept off the ground. For support there is nothing better than the galvanized wire netting, which we have before recommended. This can be had of various widths, at about half a cent per square foot. I used large quantities of it last year, and the rolls have been kept stored away ready for many future seasons' use. It is cheaper than cutting brush out of one's own woodland as I have proved, and is the neatest trellis that can be had. It is fastened to stout stakes set 16 feet apart in the row. We use the same material for training Tomato-vines.

Raleigh, N. C. *W. F. Massey.*

Lithospermum prostratum.—This lovely little rock-plant has not proved quite hardy here. It has endured a few winters, but never seemed to recover from the cold, getting weaker every season, until finally it died. But our rock-garden is in a very exposed situation, without a warm or sheltered nook in it. It is such a favorite with me, however, that I now grow it as a cool greenhouse-plant. Naturally decumbent in habit if grown in a suspended pot, it will hang over on all sides, completely hiding it. The foliage is small, dark green and abundant. The flowers are a bright metallic blue, a color almost characteristic

of the order Boraginaceæ, to which it belongs, and which includes the common Alkanet, the Virginian Cowslip, the Forget-me-not, and other common border-plants, with bright blue flowers, and many plants once commonly used by the old herbalist.

Wellesley, Mass. *T. D. H.*

Correspondence.

In the Shore Towns of Massachusetts.—VI.

To the Editor of GARDEN AND FOREST:

Sir,—Mashpee is in some degree an Indian town—Indian enough to be interesting. Before 1834 there was a reservation here, managed by the commonwealth, and the Indians were oppressed and depressed much as Indians usually have been in this country. But since 1834 the people here have constituted a town, with the same organization and relations to the state which other towns possess. These Indian people are poor, and they appear to have more public spirit than the average white people of this country. The town officers are Indians, and the town records are admirably kept. One of the principal Indian men here is a native of Boston, and he has seen much of the world as a sailor. He is a man of broad and varied intelligence and of very substantial intellectual character. He was a Representative in the Massachusetts Legislature some years ago. He resembles in an astonishing degree, in looks, manner and speech, some of the principal chiefs of the Sioux Indians of Dakota with whom I am acquainted. The Indian Town Clerk here is a valuable man in his office. I tried to persuade these Indian people to select a boy having sturdy health, prepare him well and send him to Harvard, and I hope they will yet do this. Mashpee has no holdings for places of public resort. The village is "beautiful for situation" on the shore of Great Pond, a lovely piece of water, with shores wooded nearly all around. A hill on the shore at Mashpee village has a fine grove of Pines, and a dozen acres here would make a beautiful and valuable reserve, but the people are too poor to buy the land, though it would not cost much now. The summer visitors need it already, and will need it more and more. They are only beginning to discover this beautiful region.

The view from the head of the lake, on the road from Sandwich to Mashpee, is of great beauty and interest. Mr. Benjamin Boardley, a colored man who lives here, is a manufacturer of philosophical instruments, and he is also building a steamboat to run on the lake for excursions for the summer business. The three pretty islands in this lake are owned by a company of friends—Mr. Cleveland, Mr. Gilder, the editor of *The Century Magazine*, the two Jeffersons, father and son, and another gentleman. The hotel at Mashpee is one of the best in any shore town.

Falmouth has no public holding except a town-landing, which is not much regarded. I called on Mr. Joseph Fay, who has had much experience in tree-planting. The people in all that country say that he has not only planted thousands of trees himself, but has influenced other men to plant many more. He formerly planted Scotch Pines, but afterward concluded that they are inferior to our native trees for planting in this country. He thinks trees can be made to grow almost anywhere, and that any sea-shore waste in this state can be reclaimed by the methodical planting and care of suitable trees. Mr. Fay has a beautiful Pine-grove of about fifty acres, which he bought many years ago to preserve it. It is an old picnic-ground and much-used public resort. He thinks of offering it to the town or to the Trustees of Public Reservations. Mr. Fay thinks it wrong for towns to yield their public holdings to the attacks of private greed, and regrets the lack of spirit to contend for public rights, as it is this spirit which has built up the structure of protecting laws and institutions for our civilization.

Wareham has no place of public resort. An area large enough for a pleasant green in front of a church is claimed by two men, and the Court adjudged the right to improve it to the two acting together. But as they do not act together it lies waste and unattractive. There are some beautiful White Oaks in Wareham which in form resemble the Live Oaks of Louisiana and Texas.

Marion has beautiful woods along the shores, all private holdings. Mr. Gilder, of *The Century Magazine*, lives here in summer. A great rock, which has a large White Pine growing up through it in a curious way, was about to be broken up, when Mr. Gilder interposed and paid the price asked for the rock. It is thus preserved for the present, and it is an interesting object. A small area of land around it should also be bought, so as to provide for its permanent preservation.

Mattapoisett has two bathing-places on the bay-shore, each perhaps one hundred feet square, four bath-houses and a pavilion. Some years ago the town obtained a special act of the Legislature, authorizing the formation of a park to include the entire water-front of the village—all the land between the main street and the water's edge. The ground was very cheap then, but the plan was opposed by two or three persons and finally abandoned. Now the land has all been taken up by the summer people, and its purchase by the town would be impossible. There is no park or common.

Fairhaven tried about twelve years ago to buy a square for a common, but the project was opposed and relinquished, and there is nothing of the kind in the town except Fort Phœnix, an area of about four acres, to which the national Government holds title. Mr. C. J. Tripp, the custodian of this property, is also chairman of the Committee on Property of the vigorous Town Improvement Association here. He has had charge of the fort about five years, and the trust could not be in better hands. The view from the parapet is of great interest, and from 1,000 to 2,000 people enjoy it daily in warm weather. The association wishes to buy the guns and keep them in place on the walls, but a man on the Hudson wants them for his door-yard. There are five of them, rifled 24-pounders, made at West Point for the Mexican war. The association hopes to acquire title to a bathing-ground on the beach. This society was started to set out trees, but Mr. Henry H. Rogers now buys all the trees needed by the town, and the selectmen plant them. Mr. Rogers is building an extensive library and town hall for the town. There is a cannon at the centre of the village which was captured from the British in the war of the Revolution. An inscription on a bronze plate on the gun recites the main facts in its history. An old Indian burying-ground at Sconticut Neck is now covered by a grove of trees. John Cook, the last survivor of the Pilgrims, is buried in Fairhaven, and the Improvement Association will care for his grave and erect a monument.

New Bedford has a population of 45,000, and a common of seven and three-fourths acres. A drive-way eighty feet wide leads around Clark's Point. The long, winding and very narrow bridge over the Acushnet River, between New Bedford and Fairhaven, is painfully crowded on summer evenings. It offers hardly more than space for the wheel-way. People on foot can barely avoid obstructing the drive, and are in constant danger of being run over by carriages. The dust is suffocating, but the bridge crosses the wide water, and along its course the crowds meet the delicious breath of the sea. It is the only path of escape from the heated city on summer nights, and it should be broadened so as to be a clean and comfortable promenade for the thousands of men, women and children who would seek coolness and refreshment here if there were room for them. It would promote the health, happiness, morality and civilization of the city.

Dartmouth has no public holdings for places of resort, but there are two or three landings at the end of streets or roads. Westport has town-landings on both sides of the river at the head of Westport; their area perhaps four or five acres in all. Part of it is leased to citizens for building purposes. About two acres of land on Horseneck Beach are owned by the town, including a highway, landing and watering-place. There are no commons or parks.

Fall River has two parks—North Park, of fifteen to twenty acres; South Park, sixty acres. There is a public bathing-place, but it is not in good condition, although it might be made so by a breakwater. Leading men here and in New Bedford say that the operatives in the factories appear not to value or use the parks so much as they should. They seem to need some kind of out-of-door amusement or means of entertainment to attract them to the parks. They stay indoors too much, and go to miserable shows in hot, close halls and theatres when they should be in the open air. Is this a new problem, or an old one? It would require time and considerable special observation to ascertain whether the working people of Fall River are less inclined than those of other cities to use and enjoy the public parks. No doubt, the journalists of the city could give us interesting and valuable information on these subjects, and their discussion of them would receive general attention.

I believe there are forty-six of the shore towns and cities of the state named in these notes. Only Newburyport, Manchester, Salem, Lynn, Quincy, Weymouth, Plymouth and Fall River can be regarded as fairly well equipped with parks and commons. Perhaps Essex should be added to this list. Rowley, Marblehead, Hingham, Cohasset and perhaps a few other towns have small commons, but most of the shore towns have no park, common or open space of any kind to which the

people have a right to resort. New Bedford, with 45,000 people, has seven and three-fourths acres of common, nothing besides, and Gloucester, with 25,000 people, has no public area of any kind.

Franklin Falls, N. H. *J. B. Harrison.*

Forests and the Flow of Streams—an Eighteenth Century Opinion.

To the Editor of GARDEN AND FOREST:

Sir,—Much has been written of the influence of forests and their destruction upon the flow of rivers, but in all the literature of the subject there is, perhaps, nothing more curious than the following passage from the *History of the Three Provinces, South Carolina, Georgia and East Florida*, by William Gerard de Braham, Esq., His Majesty's Surveyor-General for the Southern District of North America, reprinted, so far as relates to Georgia, in 1849, by Mr. George Wymberly Jones, from the manuscript preserved in the Library of Harvard College. The author's investigation of the natural features of the Province of Georgia and the adjacent regions extended from 1751 to 1771. The first settlement of Georgia had been made by Governor Oglethorp in 1732, and Braham tells us that "the Introduction of Sawing, Stamp and grinding Mills was almost as Early as the Settling of the Province; for which Purpose several Streams, Rivers and Rivulets proved very Convenient, but some Rivulets have disappeared two or three years after being chosen, and left the Mills dry, for the following reasons: The Rivulets, as well, as all Rivers and Streams are both sides bordered with large Forests, either low Swamp or high Oak Land, of which the Undertakers of Mills cleared only a small spot of the Trees for the Mill, above which they carried across the Rivulet a Dam, by which the Rivulet overflowed its Shores, and spread its water all over the adjacent lowest Land of the Forrest; the Trees of which (: being Air Plants :) became Subject to the Destruction proceeding from stagnant Water. In short all the Trees perished, their old Roots shrunk from their Barks, and the young Roots with their Barks shrunk from the Earth, so that either between Bark and Root or between Bark and Earth Openings appeared, and the Ground thus perforated became like unto a Sieve, through which the Waters of the Rivulets sunk down to the Quick Sand, where they will continue sinking, until these Passages in course of time are stopt up. This Evil might have been prevented, had they laid out the Land intended to reserve the Mill water into a Field, and planted it for two or three years, and during this time grubbed up all Roots, for which Labour the Crops would have richly rewarded, them (: when the Field overrun with Grass :) had run the Dam across the Rivulet, so they would have kept their Mill water on their old Fields without danger of ever losing it."

Brunswick, Ga. *F. S.*

Meetings of Societies.

The Western New York Horticultural Society.—II.

WE herewith continue the report of this meeting, which was begun last week. The first paper quoted was by Mr. Wm. McMillan, Superintendent of Parks in the city of Buffalo, and it was entitled

OUR AUTUMN FOLIAGE.

It is a well-known fact that the autumn colors of the foliage of American fields and forests are much more brilliant than the tints assumed by the ripening foliage of the woods and waysides of Europe. This notable difference is usually attributed solely to the difference in climate, and more especially to the relatively larger amount of sunshine in America. This explanation may seem reasonable if the comparison be made with the north-westerly half of Europe, where the autumn weather is much cooler and cloudier than here. But the skies of southern Europe are said to be as clear as our own. Near the Mediterranean the autumn days are milder and brighter than in any of our northern and eastern states. Yet the far-famed sunny sky of Spain, of Italy, or of Greece does not color the ripening foliage either on trees or underbrush so strongly or so generally as the American sun does, whether the season here be clear or cloudy. Difference of climate, therefore, cannot be the sole reason, perhaps not the chief one.

There is a common belief that frost is a principal agent in producing the most striking tints, and hence we often hear the remark made that the most highly colored leaves are tinged by frost. This must seem a strange delusion to any one who watches closely the development of the different shades on the earliest species that ripen long before the first touch of frost. In fact, it may be noted that, as a rule, the brightest tints, whether of red or yellow, and the most extensive display of either, appear during the first half of the season; and the trees and shrubs which turn later show their best hues when the advent of frost is longest delayed. When frost finally comes all foliage susceptible to its touch shows that its action is always to tarnish and never to varnish. Yet it is so easy and natural to reason that autumn leaves are bright-colored because they are frost-bitten, that it is quite probable this will always remain the common belief.

If, then, the influence of frost is always to blur rather than to brighten the foliage, and if also, as is generally conceded, our northern states are subject to the first killing frost at an earlier date than in Europe, the more gorgeous coloring of our autumn woods must seem strangely anomalous if it occur in spite of these disadvantages. I can account for this apparent anomaly only by assuming that it is due to the inherent quality of the plants rather than to the outward action of the elements; in other words, that it is due to the difference in the species most prevalent in each country rather than to difference in climate. Of the species most showy or abundant here, none are indigenous in Europe. Conversely, this explanation is confirmed by observing that most, if not all, of the European trees and shrubs cultivated here show even a less body of color than in their native country. As a general rule, European trees and shrubs grown here retain their foliage much later than American plants of related genera. Consequently, our first frosts come on foliage still partially green, and the effect is to stain or wither rather than to color.

If, then, the high color of our autumn foliage is due to the difference in the species of our trees and shrubs, it may be interesting to note some of the kinds that are brightest or most abundant. It will be seen that the number of species is comparatively few, and that the gorgeous appearance of our forests and fields in autumn is owing rather to the general or extensive distribution of these few kinds. The earliest tree to herald the approach of autumn is the Red Maple. It is closely followed by the Virginia Creeper, the Sour Gum, and the several species of Sumach. All of these assume intense shades of red, and their great abundance makes them everywhere conspicuous. Later, the various shades of yellow appear on the Sugar Maple, the Swamp Ashes, the Small-nut Hickories, Butternut, Tulip-tree, Poplar, Birch, Larch, Spice Bush, Witch-hazel and Yellow Root.

If the season be favorable a considerable body of darker or duller shades of yellow is furnished by the Elm, Beech, Walnut, Chestnut, Basswood, Mountain Ash and Grape-vine. Meanwhile, as the earlier species with reddish leaves drop their foliage, the various shades of red and reddish purple are continued by the Red and the Scarlet Oaks, Sweet Gum, Hornbeam, Shadbush, Hazel, and the several species of Dogwood, Viburnum, Whortleberry and Blackberry. This list is not large, but each species is very widely represented in all our northern woods and by-ways. There are a few other species not so widely distributed that may show on close inspection remarkably bright tints and variegations, such as the Buckeye, Sassafras and Honey Locust, but at a distance these contribute very little to the general display.

We are wont to speak of autumn leaves as being golden, orange, scarlet, crimson, purple, etc., but these terms are rarely accurate on close inspection. When illuminated by sunshine and seen at a favorable distance and angle with the sunbeam, these terms may be appropriate. But on critical examination at close quarters the leaves that showed so clear and pure a tint as the light shone through them or glanced from them, reveal usually a more or less stained mixture of impure shades. In purity or delicacy of tint they will not bear comparison with flowers, nor even with the fresh hues of the opening leaves on some species in the spring.

It must be remembered that the whole display is but a fleeting show—a kind of dissolving view. The duration of the brightest tints is very brief, and to be seen to the best advantage they must be sought and found at exactly the right nick of time. On the most tempting plants a long hunt through the branches may be required before a single leaf is found that is pure or uniform in color, or perfect in form and texture. The outer foliage is usually too much browned or torn by sun and wind, and so the clearest colors and best preserved specimens are more common toward the interior of the tree or bush. This is more noticeable in foliage of any yellow shade than of either red or purple. To develop the latter hues more sunlight is necessary. It is sometimes curious to observe the sharp contrast on the same leaf, when one part of it has been fully

colored in the sunlight, while the other portion, hidden under an overlapping leaf, is still quite green.

Usually each species of tree or shrub assumes the same tints each autumn, varying in degree only according as the season is favorable or not. But some species sport considerably, sometimes being arrayed in orange or parti-colored livery, instead of yellow, or red or purple. The Sugar Maple, the Sassafras, the Buckeye and the Sweet Gum are examples in point, and also the Red Maple, the Shadbush, the Poison Ivy and the Poison Dogwood. Of all our native shrubs this last is surely the most gorgeously arrayed in autumn. The most noxious plant in all our woods may thus be charged with "stealing the livery of Heaven to serve the devil in."

When the Sugar Maple shows a strongly reddish tinge it is a pretty sure indication of starvation or disease. It often happens that some branch is affected while the others are healthy, and thus it will become prematurely and strongly colored while the others are yet green. The leaf of the Sugar Maple is often remarkably veined and variegated, the striping and mottling being sometimes so bold and strong as to resemble the figures on the wings of butterflies. On the same tree or branch leaves of this kind may be found along with others having all shades of yellow or orange or russet.

The White Ash ripens through a curious range of colors unlike any other tree. The green leaf darkens to chocolate and purple, and then turning to violet gradually lightens to brown and yellow. Several of the Oaks have also rare shades of red, russet and tan. As the tissue of all Oak-leaves is too thick to let much sunlight pass through, these colors seem at a distance duller than they appear at short range. Semi-transparent leaves show off to the best advantage in autumn, as the sunbeam makes crimson leaves seem scarlet, russet leaves golden, and lightens every hue in like manner.

Our ornamental plantations make little impression on the general landscape. Of the many trees and shrubs in ordinary cultivation a large proportion are of European origin, and very few are notable for the color of their autumn foliage. As already stated, most of them are harmed by frost in this latitude before the foliage has had time to ripen fully. The Norway Maple is perhaps the most notable exception to the rule. When the season is favorable it fairly rivals its near relative, the Sugar Maple. The Horse-chestnut turns yellow in a favorable season or situation, but its foliage is often prematurely seared by heat or drought or browned by fungi. One other European plant, the Smoke-bush, assumes a strong ruddy tint, showing thus its blood-relationship to our Sumachs, a family of plants all notable for the crimson hues of their dying foliage, and also for the various dyes and varnishes and tannic acids obtained by draining their veins after death.

We have in cultivation many trees and shrubs from China and Japan, all of which likewise retain their foliage later than the related species indigenous here. Consequently few of them have the opportunity in this latitude to show the bright colors they occasionally display further south. But the Plum-leaved Spiræa, and the creeper called usually Japanese Ivy, show brilliant shades of red if the season be favorable. The rich variegation and strong contrast of colors exhibited by this so-called Ivy are very striking, because the foliage shows simultaneously every stage of the ripening process from the growing twig to the dropping leaves. Its cousin, the Virginia Creeper, sheds all its foliage a month sooner, its crimson tinge being remarkably strong and uniform over the whole plant. Two foreign coniferous trees, the Larch and the Maiden-hair, that, unlike the Pines, shed their leaves in autumn, change to a bright yellow, and are very conspicuous in a favorable season. Another tree of this family, the Bald Cypress of the southern states, is equally notable for its ruddy tinge.

But the fresh verdure which many foreign plants exhibit, for weeks later than species of the same genera indigenous here, is some compensation for the lack of high color on their immature leaves. This lively and lasting green affords a fine contrast to the autumn coloring of all our native foliage already dying or dead. Some of these plants have a sub-evergreen character, and are but slightly tarnished by frost until perhaps the middle of December, as may be noticed on all the Japanese Privets and Honeysuckles. When finally all the deciduous trees have shed their leaves, the foliage of the evergreen Spruces, Pines and Cedars becomes conspicuous, but generally its aspect is too sombre to be specially attractive, until it becomes heightened by contrast with the snows of winter.

In conclusion, some notice should, perhaps, be taken of the herbaceous foliage of our fields and by-ways in autumn. Strong shades of yellow are common, and some others are reddish purple, most notably the Poke-weed, the strong crimson dyes of which must be familiar to all of you. In our eastern and northern swamps the Cranberry-vines are often remarkably ruddy, and in the sea-side marshes the Samphire may be seen in autumn in large patches, that attract the eye a long way off by the intense crimson of the leafless stems, which are brighter in color than any foliage of either forest or field.

HOW TO OBTAIN MORE HIGH-GRADE FRUIT.

This subject was treated by Mr. George T. Powell in a practical address, from which we make the following extracts: "We cannot plant young orchards in land from which we have taken continued crops of grain and grass for years, and while the trees are growing continue to take off potatoes, oats and grass for fifteen or twenty years longer, and then hope to secure full crops of good fruit. The trees must be well planted in the first place, with roots pruned back to half their length and the top cut in quite as severely. The branches of a nursery tree are not where they are needed; often two of them are nearly opposite, which will make the tree liable to split apart. Therefore, it is good practice to take off the top entirely, leaving only buds on the main trunk where the future branches are desired. When trees are thus prepared for planting pruning for the next ten years can be done with a pocket-knife, and the fruit and foliage will be where they are needed. Since the foliage plays so important a part in preparing plant-food for use a good growth of leaves should always be ensured. It is of little consequence to use poisons against insects that devour fruit, and fungus diseases which destroy fruit, when the leaves are left to be infested with insects and parasites. Since I have sprayed the foliage of my orchards good Spitzenburgs can be grown once more. Before they were treated in this way these trees set full of fruit, but they never matured into large handsome apples. Healthy wood and healthy foliage are essential to vigorous fruit-buds and perfect fruit. There is a demand abroad, which has never been supplied, for fruit of high quality. In the Old World flavor counts for more than appearance. Every barrel of Ben Davis apples we send abroad depreciates the value of the best American apples."

THE TOXICOLOGY OF THE COPPER COMPOUNDS WHEN APPLIED AS FUNGICIDES.

After considering the chemistry of the copper compounds, the form in which they appear on the grapes, and giving a careful review of the opinions of leading chemists and medical authorities here and abroad, Professor Fairchild gave the following conclusions, based upon his examinations of grapes from the Hudson River district, where the largest amounts of copper were used:

1. The danger from the daily absorption of small quantities of copper salts with foods has been greatly exaggerated. The poisonous nature of such doses is not only not proven, but is denied by eminent authorities, whose views are supported by abundant evidence.

2. Grapes sprayed with the Bordeaux mixture according to the directions of the department in their latest publications cannot possibly contain more than 35.1000 of a grain of copper to a pound of grapes in the bunch, which amount is less than one-tenth of the amount contained in a pound of ordinary beef-liver, and absolutely inoffensive to the human system.

3. The insoluble form in which the salt of copper occurs upon the clusters, and the fact that the consumers do not eat the skins nor stems, places the mixture further still from suspicion.

4. The use of a reduced formula for the Bordeaux mixture, containing only two pounds of copper sulphate in place of six, and the substitution of the ordinary ammoniacal solution for the latest treatments immediately before ripening, will place the practice beyond the slightest possible suspicion.

Dr. Van Slyke, who analyzed the grapes from the Hudson River district, from which the grapes causing the trouble in the New York market came, gave the results of his analysis, some of which were not worked out in time to incorporate them in Professor Fairchild's paper.

The amount found on the grapes was very constant, varying from $\frac{1}{115}$ to $\frac{1}{116}$ grain per pound of fruit and stems. Physicians give one-fourth grain doses of copper as a tonic and astringent. Three thousand pounds, stems and all, would have to be eaten to get a dangerous amount of copper. The copper does not occur in the form of sulphate on the fruit, but as carbonate, which is not nearly so soluble.

Notes.

According to the *Dolgeville Herald* there were 300,000,000 feet of timber cut last year in the Adirondack forests. Two-thirds of this was made into lumber and the remainder into

paper-pulp, the product of pulp for the year being about 109,200 tons.

Curiously as it seems to us, the Japanese rank the purple form of the Wistaria high above the white form, and white blossoms of this plant are very seldom used in their floral designs.

An enterprising nurseryman in California offers to send free of charge to the children of every public school in the state a package of plants or a collection of Sweet Peas, if the children will pledge themselves to cultivate the plants within the school-grounds.

It is said that the apple-growers of Albemarle County, Virginia, have lately met a serious loss through the failure of a commission house in Liverpool, to which many of the famous pippins of the region had been consigned. This would seem to be another reason for trying to make a market for these apples in our northern cities.

Two of the new double Lilacs raised by the Messrs. Lemoine are figured in the number of the *Gardeners' Magazine* which has just come to hand. One of these has pure white flowers, each like a little rosette, and is named Madame Lemoine; the other, called Leon Simon, has deep purple flowers, which are very double. Both of them received awards by the Royal Horticultural Society last year.

A correspondent of the *American Florist* speaks of the remarkable absence of hybrid Roses from the flower-markets of this city this year as compared with former winters, when these Roses have been forced in large numbers. An occasional handful of Magna Charta Roses is all that can be seen in this line, and the result is that the only large Rose offered is American Beauty, while Meteor is the only crimson Rose for sale in any quantity, and therefore the supply of these kinds falls very far short of the needs of the market, and they are in very brisk demand. Pink is popular this year, and Madame Cusin, once classed among the most undesirable of cheap Roses, is now a leading favorite, and is sometimes ahead of Catharine Mermet in price. The Bride is still the standard white Rose in this market.

Royal rank is attributed in Japan to three flowers—the Pæony, the Cherry and the Lotus. The Pæony must always be given the position of honor in a chamber on the dais of the principal recess, and may never be placed on a shelf or in any central place; and all other flowers must be excluded from the room adorned by its royal presence. A couple of black, withered twigs are sometimes introduced among the leaves and flowers of Pæonies to enhance by contrast the luxuriant appearance of their leaves and flowers. The Lotus-plant is excluded from festive gatherings because associated with the spirits of the dead, but holds high rank in the art of floral arrangement. It is called the king of Indian flowers, and taste would be grossly violated were it ever combined with the Pæony, which is the royal flower of China, as the Cherry-blossom is of Japan.

Some time ago Colonel A. W. Pearson expressed the fear in our columns that the continuous application of copper compounds to plants as fungicides might result in the accumulation of these salts in the soil in sufficient quantity to cause sterility. In some experiments at the Geneva Station, as reported by Professor S. A. Beach in the *Country Gentleman*, the relatively enormous quantity of two per cent. and five per cent., by weight, of copper sulphate were dissolved and mixed with soil, and plants were grown in this soil. More seeds germinated in the soil treated with copper than in the untreated soil, but the plants were dwarfed, although they matured earlier than the check-plants in untreated soil. Analysis of the top-soil from a potato-field which had received many applications of Paris green, showed about three-ten thousandths of one per cent. of metallic copper. The soil from a field to which Bordeaux mixture had been applied for potato-blight, showed four-ten thousandths of one per cent. of metallic copper, or about sixteen-ten thousandths of one per cent. of copper sulphate. To impregnate such a soil as that which was used in the analysis to the depth of one foot with one per cent. of copper sulphate would require more than 32,000 pounds of the sulphate to the acre, and if applied at the rate of thirty pounds to the acre every year nearly 1,100 years would be required for its application, provided none of the salts escaped in drainage.

Mr. S. D. Dill has lately returned from the Pacific coast, whither he went to secure specimens to complete the Jesup collection in the Museum of Natural History. The most interesting specimen he obtained is a portion of the trunk of a Sequola gigantea, which was sixty-two feet in circumference eight feet above the ground, and ninety feet in circumference at the surface. It is estimated that the tree contains 400,000 feet of lumber, and a piece of the trunk four and a half feet long weighs over thirty tons. The giant stood three hundred feet high, and it was one of a few which still remained of a magnificent grove which is being rapidly converted into lumber. Two mills belonging to the company which own the tract cut 130,000 feet daily during the summer season. On another tract owned by this company there stands a forest of these giant trees containing enough timber to keep their mills running at their present capacity for fifty years. A railroad is to be built to this body of timber to convey the logs to the mill. After the trees are cut down and the logs are cut off it is necessary to split them up with dynamite into quarters before the lumbermen can handle them. Mr. Dill also secured a specimen of Quercus McDonaldi from the island of Santa Catalina, although it was formerly thought that this tree grew only on the island of Santa Cruz. Quercus Morehus, Pinus latifolia (the tree discovered by Dr. Mayr in 1887), Yucca elata, Quercus Engelmanni, Q. Palmeri, Q. agrifolia, Q. Jacobi and Populus trichocarpa were among the other species of which Mr. Dill collected specimens.

A correspondent of the *American Architect and Building News*, writing recently with regard to the World's Fair at Chicago, says: "From an architectural point of view the exhibit from Japan promises to be extremely interesting, and it is hoped that nothing will prevent the execution of the plan. Two acres of the space on the northern portion of the much-sought-after Wooded Island are desired for the exhibition. This sylvan spot was not originally intended to contain any building, and it is somewhat amusing to notice that space for such among its sheltering trees has been demanded by the promoters of nearly every exhibiting scheme. If the two acres are provided in a desirable location there will be erected on them a copy of one of the finest specimens of ancient Japanese architecture extant, and this structure, together with several others equally interesting, will be given to the city of Chicago at the close of the fair as a permanent monument of Japanese architecture and landscape-gardening. The building, it is reported, will be erected at a cost of $100,000, while the landscape-gardening will be at a cost of $20,000. One of the other buildings which the Mikado proposes to erect is a reproduction of one at Kioto, a monastery of the Zen sect. Its name is said to indicate the golden pavilion, and its date of construction runs back to 1397. It is surrounded by a garden, with ornamental and small islands designed in the form of tortoises. The pavilion at the water's edge is three stories high, and the interior decorations are said to be brilliant with gilt and coloring. Another building which the Japanese Government proposes erecting is a fac-simile of the so-called Ho-o-do, or Phœnix Hall, a structure that dates back to 1052, and is so shaped as to, in a manner, represent the fabulous bird which is not to be destroyed with fire. There is to be a so-called industrial court, where the different workers of Japan will have their place, and at the entrance a copy of the Yomei Gate of Nikke will be erected."

Catalogues Received.

A. Blanc & Co., 314 North Eleventh Street, Philadelphia, Pa.; Hints on Cacti.—Edw. W. Cone, Menomonie, Wis.; Descriptive List of Choice Strawberry-plants.—Currie Bros., Milwaukee, Wis.; Horticultural Guide.—J. Roscoe Fuller & Co., Floral Park, Queens County, N. Y.; Flower, Grass and Vegetable Seeds, Bulbs, Small Fruits, etc.—Benjamin Hammond, Fishkill-on-the-Hudson, N. Y.; Trade Price-list of Insecticides.—Timothy Hopkins, Sherwood Hall Nurseries, Menlo Park, Cal.; New and Choice Chrysanthemums, New Carnations, Roses, Ferns, Violets, Palms, Trees and Shrubs.—Johnson & Stokes, 217 and 219 Market Street, Philadelphia, Pa.; Vegetable and Flower Seeds, Bulbs, etc.—William G. McTear, Princeton, N. J.; Price-list of Chrysanthemums.—T. V. Munson, Denison, Tex.; Grapevines, Small Fruits, Roses, Shrubs, Shade and Fruit Trees.—L. L. Olds, Clinton, Wis.; New and Choice Varieties of Seed Potatoes.—Prairie State Incubator Co., Homer City, Pa.; Prairie State Incubator and Brooder.—W. W. Rawson & Co., 34 South Market Street, Boston, Mass.; Vegetable and Flower Seeds, Small Fruits, Shrubs and Trees.—Wm. Tricker, Dongan Hills, Staten Island, N. Y.; New and Rare Water Lilies, Nelumbiums and other Choice Aquatics.—J. C. Vaughan, Chicago, Ill.; Flower and Vegetable Seeds and Plants.—Thos. S. Ware, Hale Farm Nurseries, Tottenham, London, England; Illustrated General Catalogue of Flower and Vegetable Seeds, with separate illustrated lists of Chrysanthemums, Dahlias, Begonias and Miscellaneous Bulbs for Spring-planting.—Eugene Willett, North Collins, N. Y.; Wholesale Price-list of Small Fruit Plants.